

# Work Order ID 85471

June-08-12 10:05:32 AM

**\*85471\***

Page 1

Item ID: D3065-7

Accept

**\*N900040100\***

Setup Start **\*NS1\***

Revision ID:

Stop **\*NS2\***

Item Name: Step Spacer

Start Date: 08/06/2012 Start Qty: 40.00

**\*40\***

Cust Item ID:

Required Date: 22/06/2012 Req'd Qty: 40.00

**\*40\***

Customer:

Reference:

Approvals:

Process Plan: MLJ

Date: 12/06/08

Tooling:

Date:

Run Start **\*NR1\***

QC:

Date:

SPC (Y/N):

Date:

Stop **\*NR2\***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

Draw Nbr

Revision Nbr

D3065

Rev B

40

100

0.00

**\*100\***

FLOW WATER JET

Waterjet

Memo

0.00

FLOW CNC Waterjet

1-Cut as per Dwg D3065 Dwg Rev: B Prog Rev: B 2-  
Deburr if necessary

3039 . 040

B12-6-18

110

QC2- Inspect parts off machine FAI/FAIB

0.00

**\*110\***

QC

Memo

0.00

Quality Control

B12-6-18

120

QC8- Inspect parts - second check

0.00

**\*120\***

QC

Memo

0.00

Quality Control

8/2/08/18

600  
240

**\*85471\***

Page 2

**Accept**

**\*N900040100\***

Setup Start \*NS1\*

Stop \*NS2\*

**Start Date:** 08/06/2012      **Start Qty:** 40.00

**\*40\***

**Cust Item ID:**

**Required Date:** 22/06/2012      **Req'd Qty:** 40.00

**\*40\***

**Customer:**

**Reference:**

**Approvals:**      **Process Plan:** \_\_\_\_\_ **Date:** \_\_\_\_\_ **Tooling:** \_\_\_\_\_ **Date:** \_\_\_\_\_

Run Start \*NR1\*

QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Stop \*NR2\*

### Operation Description

### Set Up/ Run Hours

Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
---------	--------	--------------	---------------	---------------	------------------	----------------

130

0.00

\*130\*

### Small Fab

0.00

### Small Fab

## Memo

## Small Fab

Deburr if necessary.

140

0.00

**\*140\***

NC BRAKE

0.00

Brake NC

## Memo

Brake NC

Bend as per Dwg D3065

150

QC5- Inspect part completeness to step on W/O

0.00

**\*150\***

## Memo

0.00

OC

## Quality Control

NCR: Yes / No

## WORK ORDER NON-CONFORMANCE / UPDATE

DOA: AWDate: 12/26/17QA Closed: OKDate: 12/16/17

Work Order: <u>85471</u>				DISPOSITION		AGAINST DEPARTMENT/PROCESS							
Part No. <u>D3065-7</u>				Rework <input type="checkbox"/>		Skid-tube <input type="checkbox"/>		Crosstube <input type="checkbox"/>		Prod. Eng. Coord. <input type="checkbox"/>		Engineering <input type="checkbox"/>	
NCR No. <u>12-1581</u>				Scrap <input checked="" type="checkbox"/>		Machining <input type="checkbox"/>		Small Fab <input checked="" type="checkbox"/>		Rec/Store/Packaging <input type="checkbox"/>		Quality <input type="checkbox"/>	
				Use-as-is <input type="checkbox"/>		Thermoforming <input type="checkbox"/>		Finishing <input type="checkbox"/>		Supplier <input type="checkbox"/>			
				Work Order Update <input type="checkbox"/>		Large Fab <input type="checkbox"/>		Composite <input type="checkbox"/>		Other <input type="checkbox"/>			

Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Doc/Data	<u>12/16/17</u>	<u>100</u>	<u>el</u>	<u>1 piece cut off from water-jet led a defect</u>	<u>DAS 16 12-18 Q5ZUWZ</u>	<u>Scrap - no piece \$7.35</u>	<u>See marker 12/16/17</u>	<u>See 12/16/17</u>	<u>Q5ZUWZ</u>
Equip/Tooling									
Operator									
Material									
Offset/Setup									
Other									
Process <input checked="" type="checkbox"/>									
Supplier									
Training									
Unauthorized									

FAULT CATEGORY			
Landing Gear		Hardware	
<input type="checkbox"/> Bending Passes Below Min	<input type="checkbox"/> Breaking	<input type="checkbox"/> Burr	
<input type="checkbox"/> Centre Not Concentric to O/S	<input type="checkbox"/> Missing	<input type="checkbox"/> Contamination	
<input type="checkbox"/> Cracks	<input type="checkbox"/> Size/Length	<input type="checkbox"/> Cut Too Short	
<input type="checkbox"/> Crushed/Crimp at Bending	<input type="checkbox"/> Spinning	<input type="checkbox"/> Documentation/Data	
<input type="checkbox"/> Inspection Strip in Tube	<input type="checkbox"/> Threading	<input type="checkbox"/> Finish	
<input type="checkbox"/> Other	<input type="checkbox"/> Wrong	<input type="checkbox"/> Inspection Incomplete	
<input type="checkbox"/> Positioned Wrong	Drill Holes		<input type="checkbox"/> Inspection Unqualified
<input type="checkbox"/> Ripples on Inner Bend	<input type="checkbox"/> Misaligned	<input type="checkbox"/> Instructions Incomplete/Unclear	
<input type="checkbox"/> Torque Waves in Extrusion	<input type="checkbox"/> Ovalized	<input type="checkbox"/> Jigs/Fixtures/Tooling	
<input type="checkbox"/> Turning Sequence	<input type="checkbox"/> Over/Undersized	<input type="checkbox"/> Kit Incorrect	
<input type="checkbox"/> Wave/Twist in Tube	<input type="checkbox"/> Too Many	<input type="checkbox"/> Kit Missing	
		General	
		<input type="checkbox"/> Maintenance	
		<input type="checkbox"/> Mislabeled	
		<input type="checkbox"/> Off-Set	
		<input type="checkbox"/> Orientation Misread	
		<input type="checkbox"/> Out of Calibration	
		<input type="checkbox"/> Out of Sequence	
		<input type="checkbox"/> Outside Dimensions	
		<input type="checkbox"/> Over/Under tolerance	
		<input checked="" type="checkbox"/> Part Lost	
		<input checked="" type="checkbox"/> Part Moved	
		<input type="checkbox"/> Raw Material	
		<input type="checkbox"/> Set-up	
		<input type="checkbox"/> Supplier	
		<input type="checkbox"/> Temperature/Cure	
		<input type="checkbox"/> Weld	
		<input type="checkbox"/> Wrong Stock Pulled	
		<input type="checkbox"/> Other	

# Work Order ID 85471

June-08-12 10:05:32 AM

**\*85471\***

Page 3

Item ID: D3065-7 Accept **\*N900040100\*** Setup Start **\*NS1\***  
 Revision ID: Stop **\*NS2\***  
 Item Name: Step Spacer  
 Start Date: 08/06/2012 Start Qty: 40.00 **\*40\*** Cust Item ID:  
 Required Date: 22/06/2012 Req'd Qty: 40.00 **\*40\*** Customer:  
 Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_ Run Start **\*NR1\***  
 QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_ Stop **\*NR2\***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
160 <b>*160*</b> HandFinish Hand Finishing	Chemical Conversion Coat per QSI005 4.1  Memo	0.00  0.00				39		26/12/6-25	
170 <b>*170*</b> QC Quality Control	QC3- Inspect Part Finish  Memo	0.00  0.00				39x			12/07/11
180 <b>*180*</b> Packaging Packaging	Identify as per dwg & Stock Location <u>GA</u>  Memo	0.00  0.00				39x			12/07/11

# Work Order ID 85471

**\*85471\***

Page 4

June-08-12 10:05:32 AM

Item ID: D3065-7

Accept

**\*N900040100\***

Setup Start **\*NS1\***

Revision ID:

Item Name: Step Spacer

Stop **\*NS2\***

Start Date: 08/06/2012 Start Qty: 40.00

**\*40\***

Cust Item ID:

Required Date: 22/06/2012 Req'd Qty: 40.00

**\*40\***

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start **\*NR1\***

QC:

Date:

SPC (Y/N):

Date:

Stop **\*NR2\***

Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Tool ID

Tool #

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

190

QC21- Final Inspection - Work Order Release

0.00

**\*190\***

QC

Memo

0.00

Quality Control

ck 12/7/12

R1207-11

# Picklist Print

June-08-12 10:05:36 AM

Page 1

Work Order ID: 85471

\*85471\*

Parent Item: D3065-7

\*D3065-7\*

Parent Item Name: Step Spacer

Start Date: 08/06/2012

Required Date: 22/06/2012

Start Qty: 40.00

Required Qty: 40.00

Comments: IPP: C02.11.01Incorporated D3066-1 IPPKJ/RF  
IPP Rev:D Now on Water Jet 06-04-11 JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M2024T3S.040		Purchased		No		100	sf	123.1112	0.1574	6.627368			

\*M2024T3S 040\*

2024-T3 .040 sheet

\*\*

B12-6-18

Location

Loc Qty

Loc Code

MAT022

123.1111626

120196

25.85

120605

64.7627416

121197

32.498421

126 195

(40)

NCR: Yes / No

**WORK ORDER NON-CONFORMANCE / UPDATE**

DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order: _____  Part No. _____  NCR No. _____				<b>DISPOSITION</b>  Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update <input type="checkbox"/>		<b>AGAINST DEPARTMENT/PROCESS</b>  <div style="display: flex; justify-content: space-between;"> <div>           Skid-tube <input type="checkbox"/>            Machining <input type="checkbox"/>            Thermoforming <input type="checkbox"/>            Large Fab <input type="checkbox"/> </div> <div>           Crosstube <input type="checkbox"/>            Small Fab <input type="checkbox"/>            Finishing <input type="checkbox"/>            Composite <input type="checkbox"/> </div> <div>           Prod. Eng. Coord. <input type="checkbox"/>            Rec/Store/Packaging <input type="checkbox"/>            Supplier <input type="checkbox"/>            Other <input type="checkbox"/> </div> <div>           Engineering Quality <input type="checkbox"/>  <input type="checkbox"/>  <input type="checkbox"/> </div> </div>					
Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector		
Doc/Data											
Equip/Tooling											
Operator											
Material											
Offset/Setup											
Other											
Process											
Supplier											
Training											
Unauthorized											

FAULT CATEGORY				
<b>Landing Gear</b> <input type="checkbox"/> Bending Passes Below Min <input type="checkbox"/> Centre Not Concentric to O/S <input type="checkbox"/> Cracks <input type="checkbox"/> Crushed/Crimp at Bending <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Other <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Ripples on Inner Bend <input type="checkbox"/> Torque Waves in Extrusion <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube	<b>Hardware</b> <input type="checkbox"/> Breaking <input type="checkbox"/> Missing <input type="checkbox"/> Size/Length <input type="checkbox"/> Spinning <input type="checkbox"/> Threading <input type="checkbox"/> Wrong  <b>Drill Holes</b> <input type="checkbox"/> Misaligned <input type="checkbox"/> Ovalized <input type="checkbox"/> Over/Undersized <input type="checkbox"/> Too Many	<b>General</b> <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Documentation/Data <input type="checkbox"/> Finish <input type="checkbox"/> Inspection Incomplete <input type="checkbox"/> Inspection Unqualified <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Jigs/Fixtures/Tooling <input type="checkbox"/> Kit Incorrect <input type="checkbox"/> Kit Missing	<input type="checkbox"/> Maintenance <input type="checkbox"/> Mislabeled <input type="checkbox"/> Off-Set <input type="checkbox"/> Orientation Misread <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence <input type="checkbox"/> Outside Dimensions <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Lost <input type="checkbox"/> Part Moved <input type="checkbox"/> Raw Material	<input type="checkbox"/> Set-up <input type="checkbox"/> Supplier <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled  <input type="checkbox"/> Other _____ _____ _____



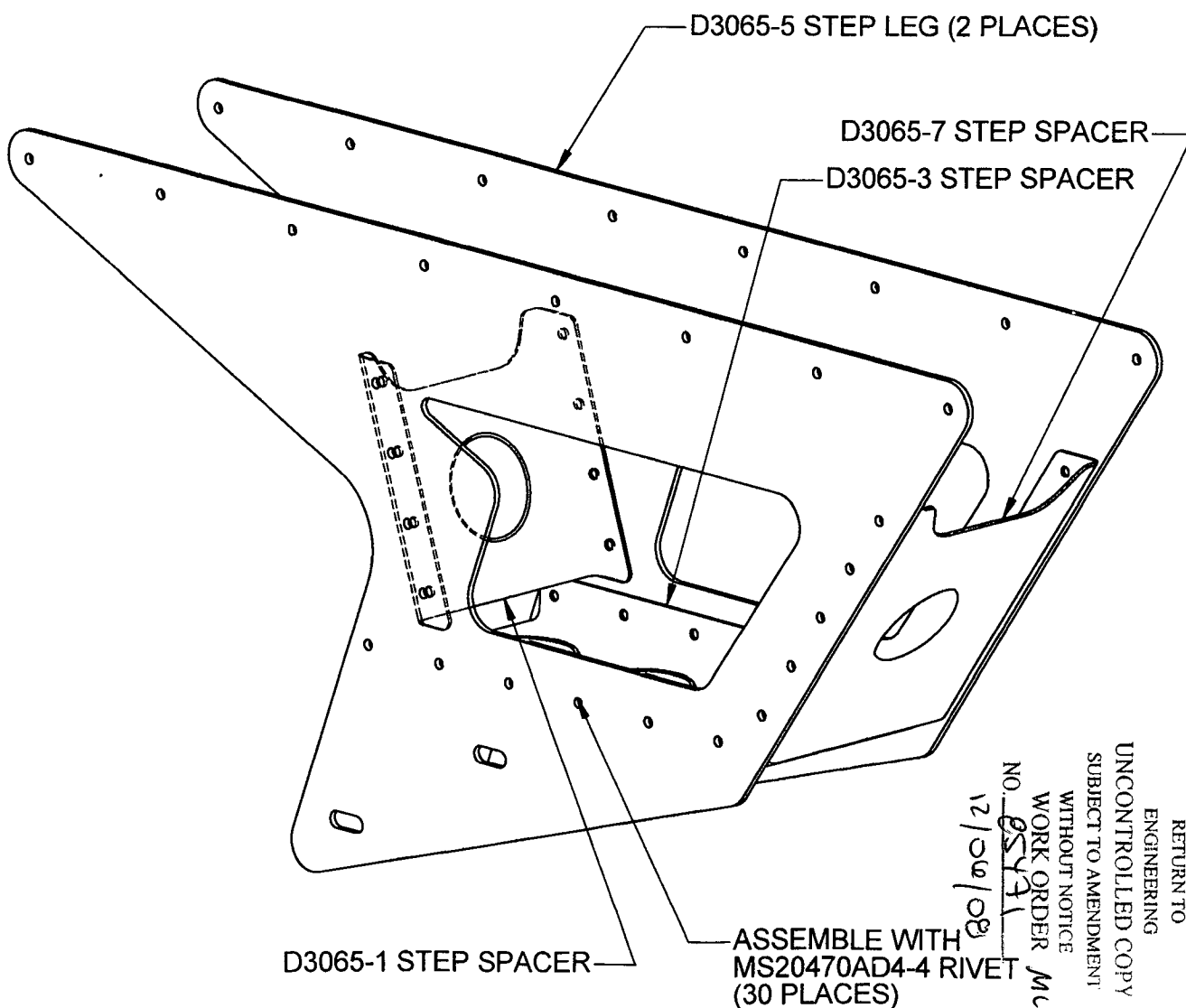




DESIGN <i>CP</i>	DRAWN BY <i>CB</i>	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED <i>PH</i>	APPROVED <i>[Signature]</i>	DRAWING NO. D3065	REV. B SHEET 1 OF 5
DATE 06.05.23		TITLE STEP LEG ASSEMBLY SCALE 1:2	
A	02.09.11	NEW ISSUE	
B	06.05.23	ADD 6061-T6 MATERIAL, ADD SLOTS TO D3065-5	

RELEASED

*06-06-20* *[Signature]*



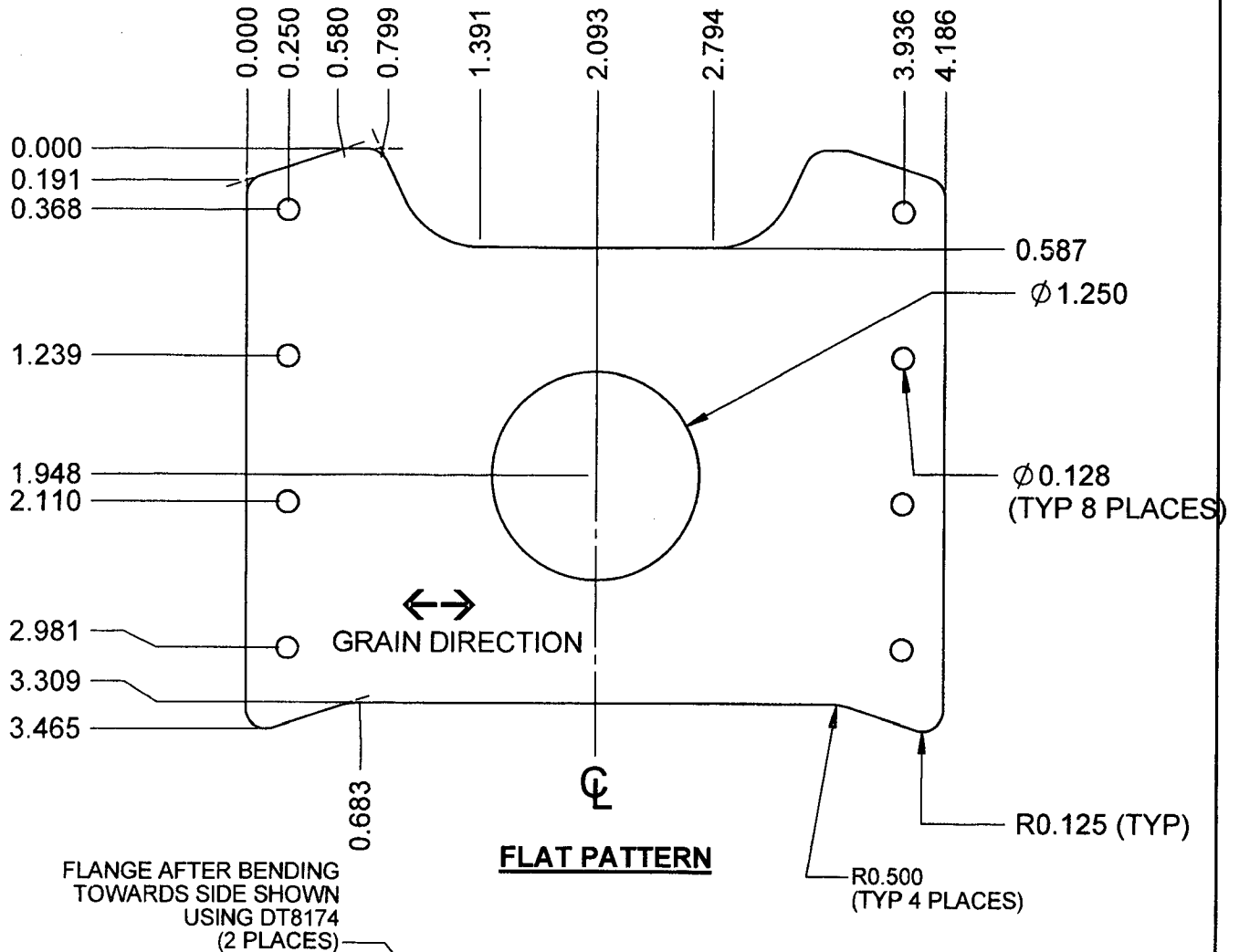
## D3065-041 STEP LEG ASSEMBLY

COPYRIGHT © 2002 BY DART AEROSPACE LTD.

THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.

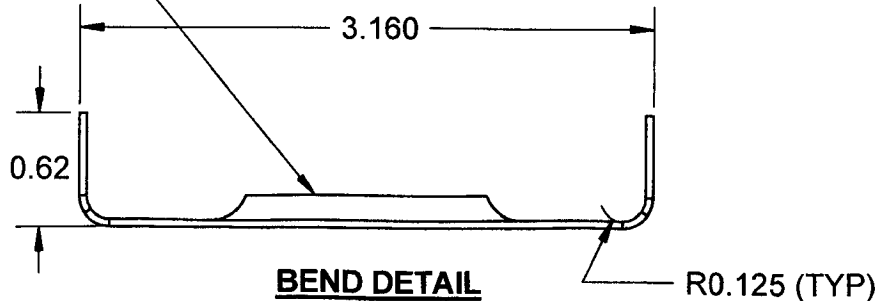


DESIGN <i>CP</i>	DRAWN BY <i>CB</i>	<b>DART AEROSPACE LTD</b> HAWKESBURY, ONTARIO, CANADA	
CHECKED <i>PH</i>	APPROVED <i>#</i>	DRAWING NO. <b>D3065</b>	REV. B SHEET 2 OF 5
DATE <b>06.05.23</b>	TITLE <b>STEP LEG ASSEMBLY</b>		SCALE 1:1



RELEASED

*cl de ro #*



### D3065-1 STEP SPACER

- 1) MATERIAL: 2024-T3 (QQ-A-250/4) 0.040 THICK (REF DART SPEC. M2024T3S.040)
- 2) FINISH: ACID ETCH & ALODINE PER DART QSI 005 4.1
- 3) BREAK ALL SHARP EDGES 0.005 TO 0.010
- 4) PART IS SYMMETRIC ABOUT CENTERLINE
- 5) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 6) ALL DIMENSIONS ARE IN INCHES

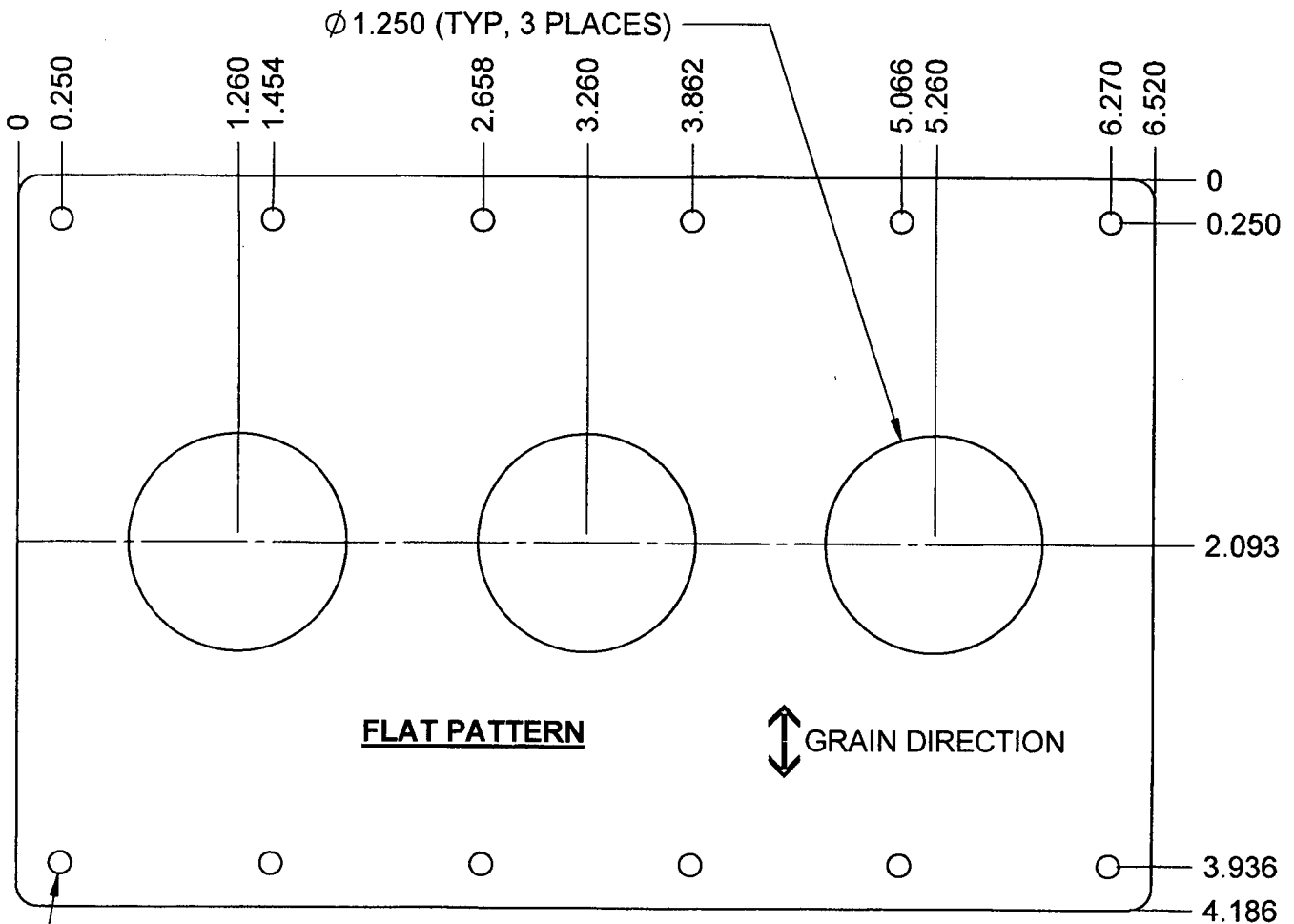
COPYRIGHT © 2002 BY DART AEROSPACE LTD.

THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.

*65171*



DESIGN <i>CP</i>	DRAWN BY <i>CB</i>	<b>DART AEROSPACE LTD</b> HAWKESBURY, ONTARIO, CANADA	
CHECKED <i>PH</i>	APPROVED <i>[Signature]</i>	DRAWING NO. <b>D3065</b>	REV. B SHEET 3 OF 5
DATE <b>06.05.23</b>		TITLE <b>STEP LEG ASSEMBLY</b>	SCALE 1:1

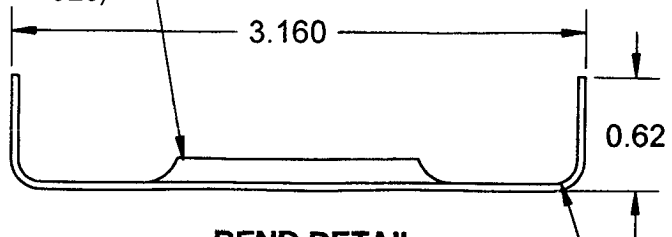


FLANGE AFTER TOWARDS SIDE  
SHOWN USING DT8174 (3 PLACES)

$\varnothing 0.129$  (TYP, 12 PLACES)

**RELEASED**

*06 06 20* *[Signature]*



**BEND DETAIL**

R0.125

*16h50*

**D3065-3 STEP SPACER**

- 1) MATERIAL: 2024-T3 (QQ-A-250/4)  
0.040 THICK (REF DART SPEC. M2024T3S.040)
- 2) FINISH: ACID ETCH & ALODINE PER DART QSI 005 4.1
- 3) PART IS SYMMETRIC ABOUT CENTERLINE
- 4) BREAK ALL SHARP EDGES 0.005 TO 0.010
- 5) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 6) ALL DIMENSIONS ARE IN INCHES

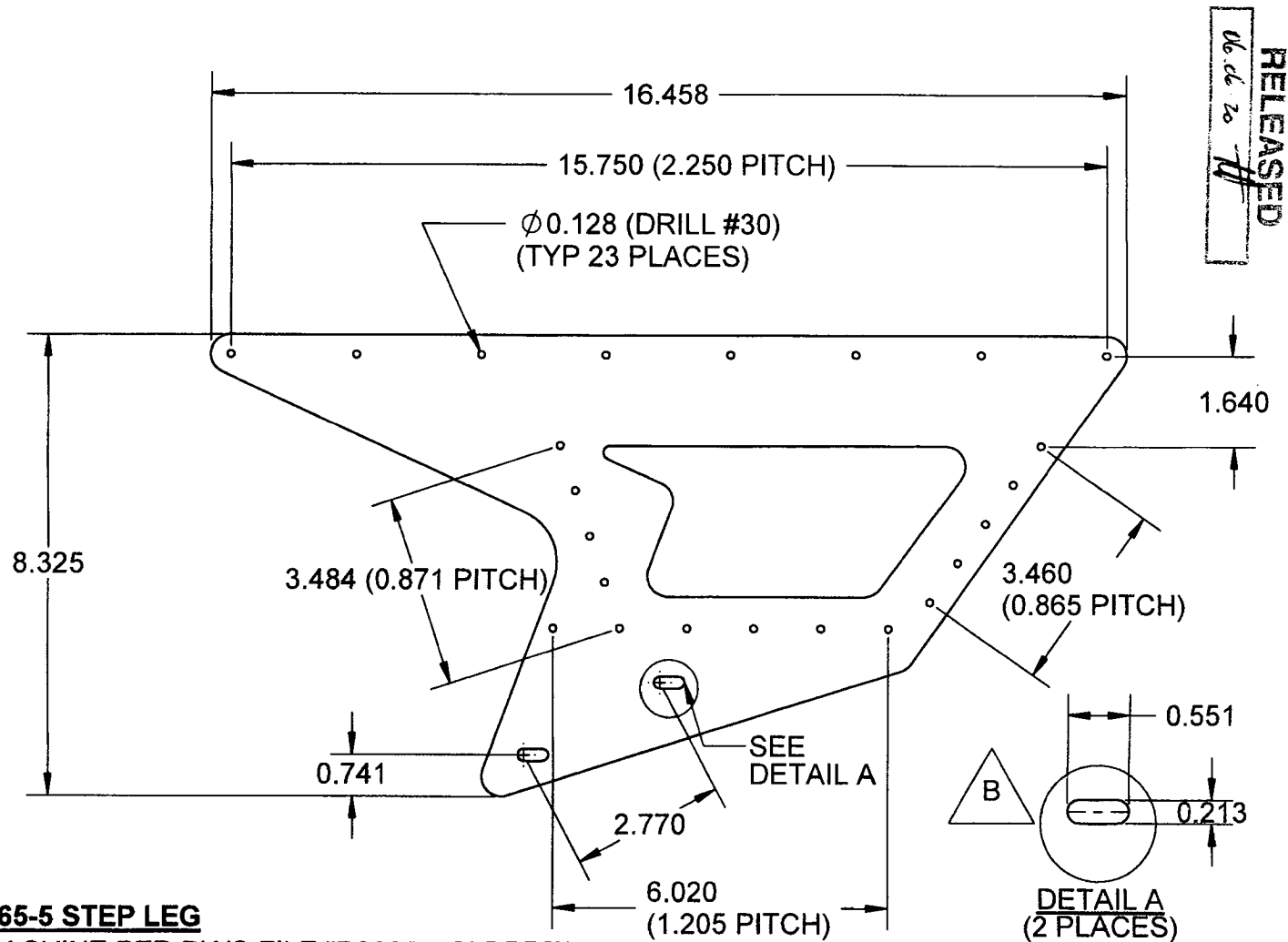
**COPYRIGHT © 2002 BY DART AEROSPACE LTD.**

THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.

85471



DESIGN	DRAWN BY	<b>DART AEROSPACE LTD</b>
CHECKED	APPROVED	HAWKESBURY, ONTARIO, CANADA
DATE	DRAWING NO.	REV. B
06.05.23	D3065	SHEET 4 OF 5
	TITLE	SCALE
	STEP LEG ASSEMBLY	1:3



### D3065-5 STEP LEG

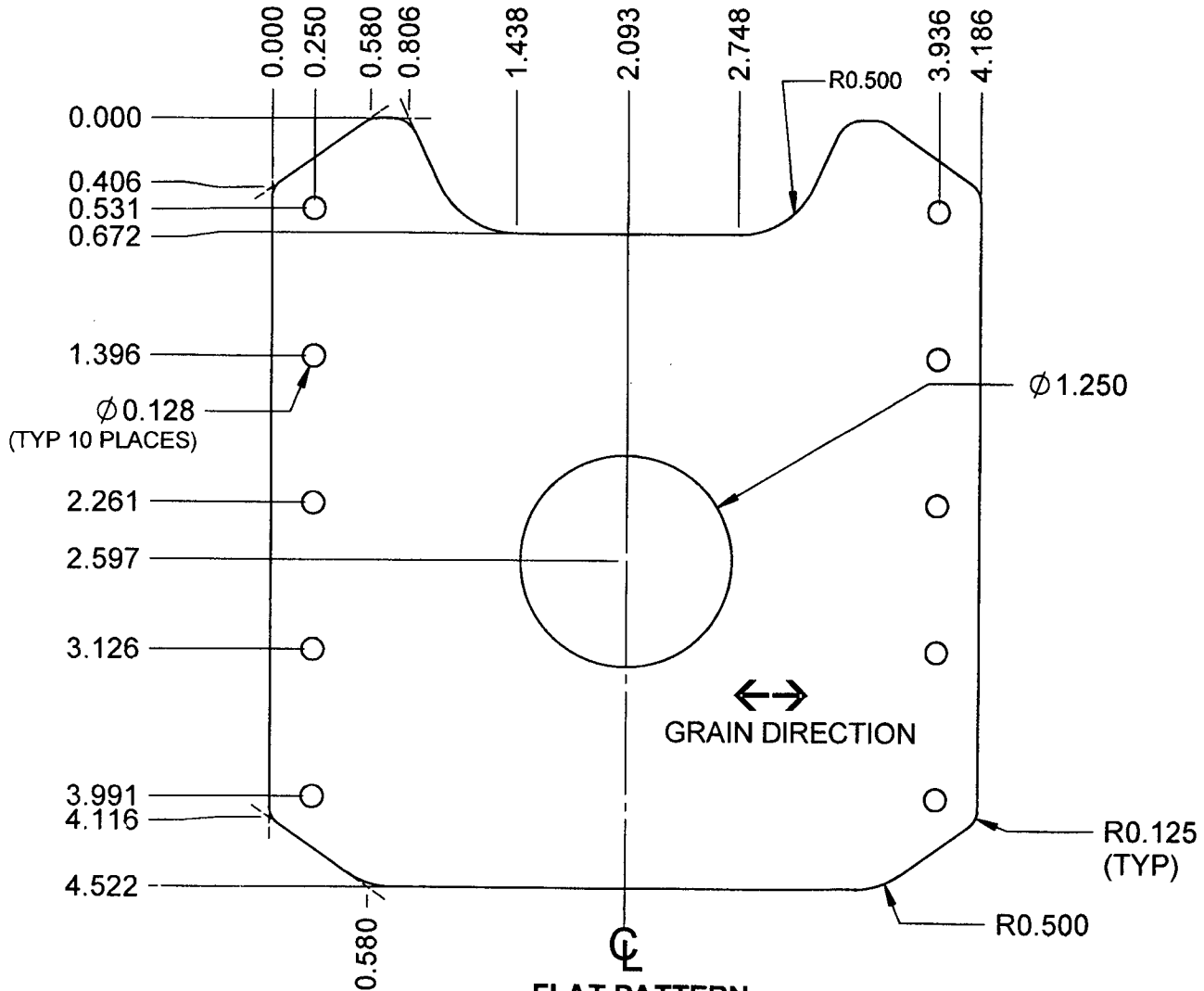
- 1) MACHINE PER DWG FILE "D3065-5.SLDPRT"
- 2) MATERIAL: 6061-T6 (PER QQ-A-250/11 OR AMS 4025 OR AMS 4027) 0.080" THICK (REF DART SPEC M6061T6S.080)  
OR  
5052-H32 (PER QQ-A-250/8 OR AMS 4016) 0.080 THICK (REF DART SPEC. M5052H32S.080)
- 3) FINISH: ACID ETCH & ALODINE PER DART QSI 005 4.1
- 4) BREAK ALL SHARP EDGES 0.005 TO 0.010
- 5) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 6) ALL DIMENSIONS ARE IN INCHES

COPYRIGHT ©2002 BY DART AEROSPACE LTD.

THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.



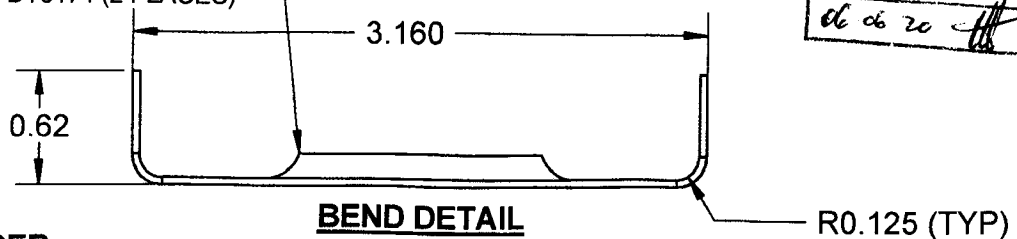
DESIGN <i>CP</i>	DRAWN BY <i>CB</i>	<b>DART AEROSPACE LTD</b> HAWKESBURY, ONTARIO, CANADA	
CHECKED <i>PH</i>	APPROVED <i>[Signature]</i>	DRAWING NO. <b>D3065</b>	REV. B SHEET 5 OF 5
DATE <b>06.05.23</b>	TITLE <b>STEP LEG ASSEMBLY</b>		SCALE 1:1



FLANGE AFTER BENDING TOWARDS  
SIDE SHOWN USING DT8174 (2 PLACES)

**FLAT PATTERN**

**RELEASED**



**BEND DETAIL**

**D3065-7 STEP SPACER**

- 1) MATERIAL: 2024-T3 (PER QQ-A-250/4) 0.040 THICK (REF DART SPEC. M2024T3S.040)
- 2) FINISH: ACID ETCH & ALODINE PER DART QSI 005 4.1
- 3) PART IS SYMMETRIC ABOUT CENTERLINE
- 4) BREAK ALL SHARP EDGES 0.005 TO 0.010
- 5) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 6) ALL DIMENSIONS ARE IN INCHES

**COPYRIGHT © 2002 BY DART AEROSPACE LTD.**

THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.

*15/1/20*